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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,979	12/28/2001	Seong-il Cho	1293.1314	3741

21171 7590 02/25/2005

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EXAMINER

BATTAGLIA, MICHAEL V

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/028,979	CHO ET AL.	
	Examiner	Art Unit	
	Michael V Battaglia	2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8-11,13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-6 and 8-11 is/are allowed.
- 6) ☒ Claim(s) 13 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Drawings

1. The replacement drawing was received on October 15, 2004. This drawing is acceptable.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yu et al (hereafter Yu) (US 6,147,467).

In regard to claim 13, Yu discloses an eccentricity compensation apparatus of a disk drive servo system having an actuator (Figs. 1 and 2, element 11 and Fig. 2, element 127) actuating a head (Fig. 1, element 12 and Fig. 7, element 79) to a position on a disk (Fig. 1, element 13) rotated by a spindle (Fig. 1, element 16) to read data on or reproduce data from the disk, the apparatus comprising: a controller (Fig. 7, element 71 (servo controller mistakenly labeled as 73)) generating and outputting a control value (Fig. 7, element 76) to compensate for eccentricity at varying reproduction speeds depending on a phase of the spindle that rotates the disk (Col. 6, lines 38-40); and a gain/phase adjuster (Fig. 7, elements 67 and 73 (summation node and dynamic compensator)) adjusting gain and phase of the control value output from the controller at a reproduction speed of the disk based on frequency response characteristics of the actuator (Figs. 8(A) and 8(B) and Col. 5, line 58-Col. 6, line 6) (also see Response to Arguments below).

In regard to claim 14, Yu discloses a method of eccentricity compensation of a disk drive servo system having an actuator (Figs. 1 and 2, element 11 and Fig. 2, element 127) actuating a

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head (Fig. 1, element 12 and Fig. 7, element 79) to a position on a disk (Fig. 1, element 13) rotated by a spindle (Fig. 1, element 16) to read data on or reproduce data from the disk, the method comprising: generating and outputting a control value (Fig. 7, element 76) to compensate for eccentricity at varying reproduction speeds depending on a phase of the spindle that rotates the disk (Fig. 7, element 71 (servo controller mistakenly labeled as 73) and Col. 6, lines 38-40); and adjusting gain and phase of the control value at a reproduction speed of the disk based on frequency response characteristics of the actuator (Fig. 7, elements 67 and 73 (summation node and dynamic compensator); Figs. 8(A) and 8(B); and Col. 5, line 58-Col. 6, line 6) (see Response to Arguments below for further explanation).

Allowable Subject Matter

3. Claims 1, 3-6 and 8-11 are allowable over the prior art of record for the reasons specified in the previous Office action.

Response to Arguments

4. Applicant's arguments filed October 15, 2004 with respect to claims 13 and 14 have been fully considered but they are not persuasive. Applicant argues that Yu does not disclose or suggest adjusting gain and phase of the control value at a reproduction speed of the disc based on frequency response characteristics of the actuator. However, the controller of Yu (Fig. 7, element 71 (servo controller mistakenly labeled as 73)) generates and outputs a control value (Fig. 7, element 76) to compensate for the deviation of the head (Fig. 7, element 79) from an in-track position (Col. 5, lines 26-31). In this way, the control value compensates for eccentricity, which causes deviation of a head from an in-track position (Col. 1, lines 59-61). It is noted that the

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controller generates and outputs the control value at varying speeds because the control value is generated and output regardless of speed (Fig. 7). The eccentricity compensated by the control value depends on the spin speed of the spindle (Fig. 1, element 16 and Col. 3, lines 35-37) and therefore depends on the phase of the spindle that rotates the disk (Fig. 1, element 13), which depends on the spin speed. The gain and the phase of the control value at a reproduction speed of the disc are adjusted based on the frequency response characteristics of the actuator (Figs. 8(A) and 8(B) (note the difference in both gain and phase with and without gain/phase adjustment (Col. 6, lines 30-40)); Col. 5, lines 60-62; and Col. 6, lines 3-6). It is noted that the claimed "frequency response characteristics of the actuator" reads on the "resonance frequency of the optical pickup head" of Yu even though the frequency response characteristic ("resonant frequency" shown in Figs. 8(A) and 8(B)) is described in Col. 5, line 58-Col. 6, line 6 as being of the head because the frequency response characteristic of a head is the same as that of the actuator (Figs. 1 and 2, element 11 and Fig. 2, element 127), not shown in Fig. 7, that is responsible for eccentricity compensation though the movement of the head in the radial direction. It is further noted that Figs. 8(A) and 8(B) of Yu show frequency response similar to the frequency response characteristics of the actuator of the claimed invention shown in Figs. 3A and 3B and are further support for the claimed "frequency response characteristics of the actuator" reading on the "resonance frequency of the optical pickup head" of Yu.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

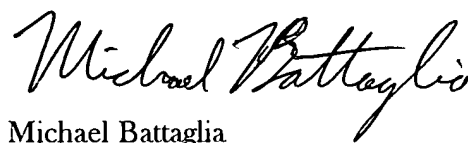
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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Battaglia whose telephone number is (703) 305-4534. The examiner can normally be reached on 5-4/9 Plan with 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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2/22/05